

Article 13. Land Treatment**§66265.270. Applicability.**

The regulations in this article apply to owners and operators of hazardous waste land treatment facilities, except as section 66265.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.270.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.272. General Operating Requirements.

(a) Hazardous waste shall not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by degradation, transformation, or immobilization processes occurring in or on the soil.

(b) The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

(c) The owner or operator shall design, construct, operate, and maintain a run-off management system capable of collecting, controlling and managing a water volume at least equivalent to a 24-hour, 25-year storm.

(d) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(e) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator shall manage the unit to control wind dispersal.

(f)(1) Unless granted a variance pursuant to subsection (f)(2) of this section, or exempted pursuant to subsection (h) of this section, every new land treatment unit at a new or existing facility, every land treatment unit which replaces an existing land treatment unit, and every laterally expanded portion of an existing land treatment unit is required to be equipped with two or more liners and a leachate collection system meeting the requirements established in section 66264.301(c) for new landfills.

(2) The Department shall grant a variance from the requirements of subsection (f)(1) or subsection (9) of this section if the owner or operator demonstrates to the Department and the Department finds all of the following:

(A) the land treatment unit was an existing land treatment unit as of January 1, 1988, and no hazardous constituents identified in Appendix VIII to chapter 11 of this division have migrated from the treatment zone of the land treatment unit into the vadose zone or into the waters of the State, and no other hazardous constituents have migrated from the land treatment unit into the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the vadose zone or the waters of the State. In making this demonstration the owner or operator shall take a sufficient number of core samples in, beneath and surrounding the treatment zone of the land treatment unit to characterize the chemical constituents in the treatment zone, in the immediate area of the vadose zone surrounding the treatment zone, and in the area of the vadose zone beneath the treatment zone and shall submit ground water monitoring data sufficient in scope to demonstrate that there has been no migration of hazardous constituents in the vadose zone or into the waters of the State. The owner or operator, as an alternative to taking these core samples, may use the data obtained from any land treatment demonstration required by the department pursuant to section 66264.272 if the data were obtained not more than two years prior to the application for the variance and were sufficient in scope to demonstrate that there has been no migration of hazardous constituents into the vadose zone or into the waters of the state;

(B) notwithstanding the date that the land treatment unit commenced operations, the design and operating practices will prevent the migration of hazardous constituents identified in Appendix VIII to chapter 11 of this division from the treatment zone of the land treatment unit into the vadose zone or into the waters of the state and no other hazardous constituents have migrated from the land treatment unit into the vadose zone or into the waters of the state in concentrations which pollute or threaten to pollute the vadose zone or the waters of the state;

(C) notwithstanding the date that the land treatment unit commenced operations, the design and operating practices provide for rapid detection and removal or remediation of any hazardous constituents that migrate from the treatment zone of the land treatment unit into the vadose zone or the waters of the state in concentrations that pollute or threaten to pollute the vadose zone or the waters of the state.

(3)(A) The Department shall renew a variance only in those cases where an owner or operator demonstrates to the Department and the Department finds, both of the following:

1. no hazardous constituents have migrated from the treatment zone of the land treatment unit into the vadose zone or into the waters of the state in concentrations which pollute or threaten to pollute the vadose zone or the waters of the state;

2. continuing the operation of the land treatment unit does not pose a significant threat of hazardous constituents migrating from the land treatment unit into the vadose zone or into the waters of the state in concentrations which pollute or threaten to pollute the vadose zone or the waters of the state.

(B) In making the demonstration for the renewal of a variance pursuant to this subsection, the owner or operator may use field tests, laboratory analysis, or operating data.

(4) A variance or a renewal of a variance may be issued for a period not to exceed three years.

(5) Neither the requirements of this section nor the variance provisions of subsection (f)(2) shall relieve the owner or operator from responsibility to comply with all other existing laws and regulations pertinent to land treatment units.

(g) Unless granted a variance pursuant to subsection (f)(2) or exempted under subsection (h) of this section, after January 1, 1990, no person shall discharge hazardous waste into a land treatment unit which has not been equipped with liners and a leachate collection and removal system which satisfy the requirements of subsection (f)(1) of this section.

(h) Land treatment of soil contaminated only with non-RCRA hazardous waste which has been excavated as part of a removal or remedial action at any hazardous substance release site is exempt from the requirements of subsection (f) of this section if all of the following apply:

(1) the Department determines that the land treatment does not pose a threat to public health or safety or the environment;

(2) the land treatment is conducted pursuant to a plan approved by the Department or a cleanup and abatement order issued by a regional water quality control board;

(3) the land treatment is not conducted at an offsite commercial facility;

(4) the land treatment is used only for purposes of removal or remedial action and, upon completion of the land treatment portion of the removal or remedial action, the land treatment unit is closed.

(i) For purposes of this section, the terms "removal," "remedial action," "hazardous substance" and "release" shall be defined in accordance with article 2 (commencing with section 25310) of chapter 6.8 division 20 of the Health and Safety Code.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159, 25159.5, 25209.2, 25209.3 and 25209.5, Health and Safety Code; 40 CFR Section 265.272.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.273. Waste Analysis.

(a) In addition to the waste analyses required by section 66265.13, before placing a hazardous waste in or on a land treatment facility, the owner or operator shall:

(1) determine the concentrations in the waste of any substances which equal or exceed the maximum concentrations contained in section 66261.24, that cause a waste to exhibit the toxicity characteristic; and

(2) for any waste listed in article 4 of chapter 11 of this division, determine the concentrations of any substances which caused the waste to be listed as a hazardous waste.

(B) Chapter 11 of this division specifies the substances for which a waste is listed as a hazardous waste. As required by section 66265.13, the waste analysis plan shall include analyses needed to comply with sections 66265.281 and 66265.282. As required by section 66265.73, the owner or operator shall place the results from each waste analysis, or the documented information, in the operating record of the facility.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.273.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.276. Food Chain Crops.

(a) An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown and will be grown in the future, shall notify the Department within 60 days after July 1, 1991.

(b)(1) Food chain crops shall not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury or other constituents identified under section 66265.273(b):

(A) will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals (e.g., by grazing); or

(B) will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

(2) The information necessary to make the demonstration required by subsection (b)(1) of this section must be kept at the facility and must, at a minimum:

(A) be based on tests for the specific waste and application rates being used at the facility; and

(B) include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods and statistical procedures.

(c) Food chain crops shall not be grown on a land treatment facility receiving waste that contains cadmium unless all requirements of subsections (c)(1)(A) through (C) of this section or all requirements of subsections (c)(2)(A) through (D) of this section are met.

(1)(A) The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less.

(B) The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables or root crops grown for human consumption. For other food chain crops, the annual cadmium application rate does not exceed:

Time Period	Annual Cd Application Rate (kg/ha)
Present to June 30, 1984.....	2.0
July 1, 1984 to December 31, 1986.....	1.25
Beginning January 1, 1987.....	0.5

(C) The cumulative application of cadmium from waste does not exceed the levels in either paragraph (c)(1)(C) 1. or 2. of this section.

1.

Soil Cation Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)	
	Back-ground Soil pH Less Than 6.5	Back-ground Soil pH Greater Than 6.5
Less than 5.....	5	5
5 to 15.....	5	10
Greater than 15.....	5	20

2. For soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below; provided, that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Soil Cation Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)
Less than 5.....	5
5 to 15.....	10
Greater than 15.....	20

(2)(A) The only food chain crop produced is animal feed.

(B) The pH of the waste and soil mixture is 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later and this pH level is maintained whenever food chain crops are grown.

(C) There is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses.

(D) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with paragraph (c)(2) of this section.

(d) As required by section 66265.73, if an owner or operator grows food chain crops on his land treatment facility, he shall place the information developed in this section in the operating record of the facility.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.276.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.278. Vadose Zone (Zone of Aeration) Monitoring.

(a) The owner or operator shall have in writing, and shall implement, a vadose zone monitoring plan which is designed to:

(1) detect the vertical migration of hazardous waste and hazardous waste constituents under the active

portion of the land treatment facility, and

(2) provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby; this background monitoring shall be conducted before or in conjunction with the monitoring required under subsection (a)(1) of this section.

(b) The vadose zone monitoring plan shall include, at a minimum:

(1) soil monitoring using soil cores, and

(2) soil-pore water monitoring using devices such as lysimeters.

(c) To comply with subsection (a)(1) of this section, the owner or operator shall demonstrate in the vadose zone monitoring plan that:

(1) the depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil:

(2) the number of soil and soil-pore water samples to be taken is based on the variability of:

(A) the hazardous waste constituents (as identified in sections 66265.273(a) and (b) in the waste and in the soil; and

(B) the soil type(s); and

(3) the frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

(d) The owner or operator shall keep at the facility his vadose zone monitoring plan, and the rationale used in developing this plan.

(e) The owner or operator shall analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under sections 66265.273(a) and (b).

(f) As required by section 66265.73, all data and information developed by the owner or operator under this section shall be placed in the operating record of the facility.

(g) Except as provided in section 66265.272(h) no person shall place or dispose of hazardous waste in a land treatment unit if any of the following conditions exist:

(1) hazardous constituents have migrated from the land treatment unit into the vadose zone beneath or surrounding the treatment zone or into the waters beneath or surrounding the treatment zone;

(2) there is evidence that a hazardous constituent in the waste discharged to the land treatment unit has not been or will not be completely degraded, transformed or immobilized in the treatment zone;

(3) there is a significant potential for hazardous constituents to migrate from the land treatment unit into a potential source of drinking water.

(h) The owner or operator shall periodically, at the request of the Department, and at least annually, submit information required by the Department to assure that the conditions set forth in subsections (g)(1) and (g)(2) of this section are not present. The information to be submitted to the Department to demonstrate compliance with subsection (g) of this section shall include, but is not limited to, a sufficient number of soil core samples in, beneath, and surrounding the treatment zone of the land treatment unit to detect any constituents of concern.

(i) If the owner or operator determines pursuant to subsection (a) of this section, that there has been a statistically significant increase in the concentration of a hazardous constituent below the treatment zone, or that either of the conditions set forth in subsections (g)(1) or (g)(2) of this section are detected and confirmed, or that conditions exist that render the owner or operator unable to continue to satisfy the variance requirements of section 66265.272(f)(2), the owner or operator shall, within 72 hours, report to the Department describing the full extent of the owner's or operator's findings, including the identification of all constituents which have shown a statistically significant increase.

(j) Upon receiving notice pursuant to subsection (i) of this section, or upon independent confirmation by the Department, the Department shall order the owner or operator to cease operating the land treatment unit. The owner or operator shall not resume operating the land treatment unit and shall close the land treatment unit unless one of the following actions is taken:

(1) the owner or operator completes appropriate removal or remedial actions to the satisfaction of the Department, and the owner or operator submits to the Department, and the Department approves, an application for a permit or a variance modification to modify the operating practices at the facility to maximize the success of degradation, immobilization, or transformation processes in the treatment zone; or

(2) the owner or operator completes appropriate removal or remedial actions, submits to the Department, and the Department approves, an application for a permit or a variance modification to modify the operating practices at the facility to maximize the success of degradation, immobilization, or transformation processes in the treatment zone, and equips the land treatment unit with liners, and a leachate collection and removal system that satisfy the requirements of section 66265.272(f)(1).

(k) All actions taken by an owner or operator pursuant to subsections (j)(1) or (j)(2) of this section shall be completed within a time period specified by the Department, which shall not exceed 18 months after the Department receives notice pursuant to subsection (i) of this section. If the actions are not completed within this time period, the land treatment unit shall be closed, unless granted an extension by the Department due to exceptional circumstances beyond the control of the owner and operator.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159, 25159.5 and 25209.4, Health and Safety Code; 40 CFR Section 265.278.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.279. Recordkeeping.

The owner or operator shall include hazardous waste application dates and rates in the operating record required under section 66265.73.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.279.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.280. Closure and Post-Closure.

(a) In the closure plan under section 66265.112 and the post-closure plan under section 66265.118, the owner or operator shall address the following objectives and indicate how they will be achieved:

(1) prevention of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water;

(2) prevention of the release of contaminated run-off from the facility into surface water;

(3) prevention of the release of airborne particulate contaminants caused by wind erosion; and

(4) compliance with section 66265.276 concerning the growth of food-chain crops.

(b) The owner or operator shall consider at least the following factors in addressing the closure and post-closure care objectives of subsection (a) of this section:

(1) type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

(2) the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

(3) site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water and drinking water sources);

(4) climate, including amount, frequency, and pH of precipitation;

(5) geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

(6) vadose zone monitoring information obtained under section 66265.278; and

(7) type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

(c) The owner or operator shall consider at least the following methods in addressing the closure and post-closure care objectives of subsection (a) of this section:

(1) removal of contaminated soils;

(2) placement of a final cover, considering:

(A) functions of the cover (e.g., infiltration control, erosion and run-off control, and wind erosion control); and

(B) characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

(3) monitoring of ground water.

(d) In addition to the requirements of article 7 of this chapter, during the closure period the owner or operator of a land treatment facility shall:

(1) continue vadose zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

(2) maintain the run-on control system required under section 66265.272(b);

(3) maintain the run-off management system required under section 66265.272(c); and

(4) control wind dispersal of particulate matter which may be subject to wind dispersal.

(e) For the purpose of complying with section 66265.115, when closure is completed the owner or operator may submit to the Department certification both by the owner or operator and by an independent qualified soil scientist, or an independent California Certified Engineering Geologist, in lieu of an independent California registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

(f) In addition to the requirements of section 66265.117, during the post-closure care period the owner or operator of a land treatment unit shall:

(1) continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

(2) restrict access to the unit as appropriate for its post-closure use;

(3) control wind dispersal of hazardous waste.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.280.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.281. Special Requirements for Ignitable or Reactive Waste.

The owner or operator shall not apply ignitable or reactive waste to the treatment zone unless the waste and

treatment zone meet all applicable requirements of chapter 18 of this division, and:

- (a) the waste is immediately incorporated into the soil so that:
 - (1) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under sections 66261.21 or 66261.23 of this chapter; and
 - (2) section 66264.17(b) is complied with; or
- (b) the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.281.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

§66265.282. Special Requirements for Incompatible Wastes.

Incompatible wastes, or incompatible wastes and materials (see Appendix V for examples), shall not be placed in the same land treatment area, unless section 66265.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 265.282.

HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).